**CO2 Sequestration in Shales Bibliography**

Selected References— Revised April 2021

These bibliographic references have been compiled as a TSOP project, and organic petrologists have found the references to be useful in their work. They should be available at university or geological research center libraries. They are not available from TSOP.

Bacon, D.H., C.M.R. Yonkofski, H.T. Schaef, M.D. White, and B.P. McGrail, 2015, CO2 storage by sorption on organic matter and clay in gas shale: Journal of Unconventional Oil and Gas Resources, v. 12, p. 123-133.

Bakhshian, S., and S.A. Hosseini, 2019, Prediction of CO2 adsorption-induced deformation in shale nanopores: Fuel, v. 241, p. 767-776.

Busch, A., S. Alles, Y. Gensterblum, D. Prinz, D.N. Dewhurst, M.D. Raven, H. Stanjek, and B.M. Krooss, 2008, Carbon dioxide storage potential of shales: International Journal of Greenhouse Gas Control, v. 2, p. 297-308.

Chareonsuppanimit, P., S.A. Mohammad, R.L. Robinson, Jr., and K.A.M. Gasem, 2012, High-pressure adsorption of gases on shales: Measurements and modeling: International Journal of Coal Geology, v. 95, p. 34-46.

Chen, C., W. Hu, J. Sun, W. Li, and Y. Song, 2019, CH4 adsorption and diffusion in shale pores from molecular simulation and a model for CH4 adsorption in shale matrix: International Journal of Heat and Mass Transfer, v. 141, p. 367-378.

Du, X., M. Gu, Z. Hou, Z. Liu, and T. Wu, 2019, Experimental study on the kinetics of adsorption of CO2 and CH4 in gas-bearing shale reservoirs: Energy & Fuels, v. 33, p. 12587-12600.

Fathi, E., and I.Y. Akkutlu, 2014, Multi-component gas transport and adsorption effects during CO2 injection and enhanced shale gas recovery: International Journal of Coal Geology, v. 123, p. 52-61.

Firouzi, M., E.C. Rupp, C.W. Liu, and J. Wilcox, 2014, Molecular simulation and experimental characterization of the nanoporous structures of coal and gas shale: International Journal of Coal Geology, v. 121, p. 123-128.

Godec, M., G. Koperna, R. Petrusak, and A. Oudinot, 2013, Potential for enhanced gas recovery and CO2 storage in the Marcellus Shale in the eastern United States: International Journal of Coal Geology, v. 118, p. 95-104.

Goodman, A., S. Sanguinito, M. Tkach, S. Natesakhawat, B. Kutchko, J. Fazio, and P. Cvetic, 2019, Investigating the role of water on CO2-Utica Shale interactions for carbon storage and shale gas extraction activities – Evidence for pore scale alterations: Fuel, v. 242, p. 744-755.

Habibi, A., M.R. Yassin, H. Dehghanpour, and D. Bryan, 2017, Experimental investigation of CO2-oil interactions in tight rocks: A Montney case study: Fuel, v. 203, p. 853-867.

Hamza, A., I.A. Hussein, M.J. Al-Marri, M. Mahmond, R. Shawabkeh, and S. Aparicio, 2021, CO2 enhanced gas recovery and sequestration in depleted gas reservoirs: A review: Journal of Petroleum Science and Engineering, v. 196, 107685.

Heller, R., and M. Zoback, 2014, Adsorption of methane and carbon dioxide on gas shale and pure mineral samples: Journal of Unconventional Oil and Gas Resources, v. 8, p. 14-24.

Ho, T.A., Y. Wang, Y. Xiong, and L.J. Criscenti, 2018, Differential retention and release of CO2 and CH4 in kerogen nanopores: Implications for gas extraction and carbon sequestration: Fuel, v. 220, p. 1-7.

Hou, L., D. Elsworth, and X. Geng, 2020, Swelling and embedment induced by sub- and super-critical-CO2 on the permeability of propped fractures in shale: International Journal of Coal Geology, v. 225, 103496.

Kang, S.M., E. Fathi, R.J. Ambrose, I.Y. Akkutlu, and R.F. Sigal, 2010, Carbon dioxide storage capacity of organic-rich shales: Society of Petroleum Engineers, SPE 134583, 17 p.

Khosrokhavar, R., K.-H. Wolf, and H. Bruining, 2014, Sorption of CH4 and CO2 on a carboniferous shale from Belgium using a manometric setup: International Journal of Coal Geology, v. 128-129, p. 153-161.

Lahann, R., M. Mastalerz, J.A. Rupp, and A. Drobniak, 2013, Influence of CO2 on New Albany Shale composition and pore structure: International Journal of Coal Geology, v. 108, p. 2-9.

Lan, Y., Z. Yang, P. Wang, Y. Yan, L. Zhang, and J. Ran, 2019, A review of microscopic seepage mechanism for shale gas extracted by supercritical CO2 flooding: Fuel, v. 238, p. 412-424.

Lashgari, H.R., A. Sun, T. Zhang, G.A. Pope, and L.W. Lake, 2019, Evaluation of carbon dioxide storage and miscible gas EOR in shale oil reservoirs: Fuel, v. 241, p. 1223-1235.

Li, J., X. Yan, W. Wang, Y. Zhang, J. Yin, S. Lu, F. Chen, Y. Meng, X. Zhang, X. Chen, Y. Yan, and J. Zhu, 2015, Key factors controlling the gas adsorption capacity of shale: A study based on parallel experiments: Applied Geochemistry, v. 58, p. 88-96.

Liu, F., 2012, Assessment of CO2 storage potential in saline formations and shale gas reservoirs with enhanced gas recovery in the Midwest regions, U.S.A.: Bloomington, Indiana University, unpublished PhD dissertation, 176 p.

Liu, J., Y. Yao, D. Liu, and D. Elsworth, 2017, Experimental evaluation of CO2 enhanced recovery of adsorbed-gas from shale: International Journal of Coal Geology, v. 179, p. 211-218.

Liu, J., H. Xie, Q. Wang, S. Chen, and Z. Hu, 2019, The effect of pore size on shale gas recovery with CO2 sequestration: Insight into molecular mechanisms: Energy & Fuels, v. 33, p. 2897-2907.

Liu, J., H. Xie, Q. Wang, S. Chen, and Z. Hu, 2020, Influence of pore structure on shale gas recovery with CO2 sequestration: Insights into molecular mechanisms: Energy & Fuels, v. 34, p. 1240-1250.

Luo, X., S. Wang, Z. Wang, Z. Jing, M. Lv, Z. Zhai, and T. Han, 2015, Adsorption of methane, carbon dioxide and their binary mixtures on Jurassic shale from the Qaidam Basin in China: International Journal of Coal Geology, v. 150-151, p. 210-223.

Luo, X., X. Ren, and S. Wang, 2019, Supercritical CO2-water-shale interactions and their effects on element mobilization and shale pore structure during stimulation: International Journal of Coal Geology, v. 202, p. 109-127.

Myshakin, E.M., H. Singh, S. Sanguinito, G. Bromhal, and A.L. Goodman, 2019, Flow regimes and storage efficiency of CO2 injected into depleted shale reservoirs: Fuel, v. 246, p. 169-177.

Nuttall, B.C., C.F. Eble, J.A. Drahovzal, and R.M. Bustin, 2005, Analysis of Devonian black shales in Kentucky for potential carbon dioxide sequestration and enhanced natural gas production: Kentucky Geological Survey/University of Kentucky report, DE-FC26-02NT41442.

Nuttall, B.C., 2007, Analysis of Devonian shale in eastern Kentucky for carbon sequestration possibilities: Energeia, v. 18, no. 3, p. 1-3.

Nuttall, B.C., J.A. Drahovzal, C.F. Eble, and R.M. Bustin, 2009, Regional assessment of organic-rich gas shales for carbon sequestration: an example from the Devonian shales of the Illinois and Appalachian basins, Kentucky: AAPG Studies in Geology, v. 59, p. 173-190.

Pearce, J.K., G.K.W. Dawson, T.P. Blach, J. Bahadur, Y.B. Melnichenko, and S.D. Golding, 2018, Impure CO2 reaction of feldspar, clay, and organic matter rich cap-rocks: Decreases in the fraction of accessible mesopores measured by SANS: International Journal of Coal Geology, v. 185, p. 79-90.

Pluymakers, A., J. Liu, F. Kohler, F. Renard, and D. Dysthe, 2018, A high resolution interferometric method to measure local swelling due to CO2 exposure in coal and shale: International Journal of Coal Geology, v. 187, p. 131-142.

Pranesh, V., 2018, Subsurface CO2 storage estimation in Bakken tight oil and Eagle Ford shale gas condensate reservoirs by retention mechanism: Fuel, v. 215, p. 580-591.

Qi, R., Z. Ning, Q. Wang, L. Huang, X. Wu, Z. Cheng, and W. Zhang, 2019, Measurements and modeling of high-pressure adsorption of CH4 and CO2 on shales: Fuel, v. 242, p. 728-743.

Rani, S., B.K. Prusty, and S.K. Pal, 2018, Adsorption kinetics and diffusion modeling of CH4 and CO2 in Indian shales: Fuel, v. 216, p. 61-70.

Rani, S., E. Padmanabhan, and B.K. Prusty, 2019, Review of gas adsorption in shales for enhanced methane recovery and CO2 storage: Journal of Petroleum Science and Engineering, v. 175, p. 634-643.

Řimnáčová, D., Z. Weishauptová, O. Přibl, I. Sýkorová, and M. René, 2020, Effect of shale properties on CH4 and CO2 sorption capacity in Czech Silurian shales: Journal of Natural Gas Science and Engineering, v. 80, 103377.

Ruppert, L.F., A.M. Jubb, T.F. Headen, T.G.A. Youngs, and B. Bandli, 2020, Impacts of mineralogical variation on CO2 behavior in small pores from producing intervals of the Marcellus Shale: Results from neutron scattering: Energy & Fuels, v. 34, p. 2765-2771.

Sheng, J.J., 2017, Critical review of field EOR projects in shale and tight reservoirs: Journal of Petroleum Science and Engineering, v. 159, p. 654-665.

Stefanopoulos, K.L., T.G.A. Youngs, R. Sakurovs, L.F. Ruppert, J. Bahadur, and Y.B. Melnichenko, 2017, Neutron scattering measurements of carbon dioxide adsorption in pores within the Marcellus Shale: Implications for sequestration: Environmental Science & Technology.

Tang, X., 2019, Surface thermodynamics of hydrocarbon vapors and carbon dioxide adsorption on shales: Fuel, v. 238, p. 402-411.

Tayari, F., S. Blumsack, R. Dilmore, and S.D. Mohaghegh, 2015, Techno-economic assessment of industrial CO2 storage in depleted shale gas reservoirs: Journal of Unconventional Oil and Gas Resources, v. 11, p. 82-94.

Vialle, S., J. Ajo-Franklin, and J.W. Carey, eds., 2019, Geological carbon storage: Subsurface seals and caprock integrity: American Geophysical Union, Geophysical Monograph 238, 352 p.

Wang, S., F. Javadpour, and Q. Feng, 2016, Fast mass transport of oil and supercritical carbon dioxide through organic nanopores in shale: Fuel, v. 181, p. 741-758.

Weniger, P., W. Kalkreuth, A. Busch, and B.M. Krooss, 2010, High-pressure methane and carbon dioxide sorption on coal and shale samples from the Paraná Basin, Brazil: International Journal of Coal Geology, v. 84, p. 190-205.

Yang, S., K. Wu, J. Xu, J. Li, and Z. Chen, 2019, Roles of multicomponent adsorption and geomechanics in the development of an Eagle Ford shale condensate reservoir: Fuel, v. 242, p. 710-718.

Yin, H., J. Zhou, Y. Jiang, X. Xian, and Q. Liu, 2016, Physical and structural changes in shale associated with supercritical CO2 exposure: Fuel, v. 184, p. 289-303.

Zeng, K., P. Jiang, Z. Lun, and R. Xu, 2019, Molecular simulation of carbon dioxide and methane adsorption in shale organic nanopores: Energy & Fuels, v. 33, p. 1785-1796.

Zhao, G., and C. Wang, 2019, Influence of CO2 on the adsorption of CH4 on shale using low-field nuclear magnetic resonance technique: Fuel, v. 238, p. 51-58. (NMR)

Zhou, J., Z. Jin, and K.H. Luo, 2019, Effects of moisture contents on shale gas recovery and CO2 sequestration: Langmuir, v. 35, p. 8716-8725.

Zhu, C., Y. Li, Q. Zhao, H. Gong, Q. Sang, H. Zou, and M. Dong, 2018, Experimental study and simulation of CO2 transfer processes in shale oil reservoir: International Journal of Coal Geology, v. 191, p.24-36.